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EXAMINER	
LEE, BENJAMIN C	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/396,352	TUMER, TUMAY O.	
	Examiner	Art Unit	
	Benjamin C. Lee	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27,28,33-52,54-84,87 and 90-109* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27,28,33-52,54-84,87 and 90-109* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response To Amendment

Claim Status

1. **Claims 27-28, 33-52 and 54-84, 87 and 90-109** are pending.

Claim Rejections - 35 USC § 103

2. **Claims 75-76, 78-81, 83-84, 90-96 and 100** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al. (US pat. #5,105,190).

1) In considering amended claims 75:

Kip et al. discloses a tag comprising a circuit that includes: an antenna (5) that receives an electromagnetic wave (Fig. 2); a signal receiving system that receives and stores input data derived from the wave (23, 24 of Fig. 2; Fig. 3), a separate power storage component that receives and stores sufficient energy to power the circuit including the transmitting antenna (6, 26, 8 of Fig. 2); a data processing system (7 of Fig. 2) that produces output data form the input data; and the backscatter antenna (5) and electronics (7) that transmit at least a portion of the input data externally to the tag (backscattering communication in Figs. 2-3); except: specifying the claimed wherein the circuit is in the form of an integrated circuit.

In the same art of tag construction, Carroll teaches all circuit components of a tag are implemented in the form of an integrated circuit located on a die (Figs. 9A-9B and col. 11, line 11 to col. 12, line 51).

In view of the teachings by Kip et al. and Carroll, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the tag circuit of Kip in an integrated circuit form as taught by Carroll for mass production benefits such as cost, and compact housing for ease of physical application in intended uses.

2) Regarding claim 76, Kip et al. and Carroll render obvious all of the claimed subject matter as in claim 75, including:

--the claimed wave has a wavelength within a spectrum of the wavelengths from radio waves to ultraviolet light (col. 4, lines 50-55 and col. 2, lines 43-52 of Carroll.)

While Kip et al. did not specify the frequency range of the electromagnetic waves in spectrum, Carroll specified the RF waves, and indicated that use of RF waves as opposed to magnetic fields enables longer reading range (col. 2, lines 43-52). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the tag system of Kip et al. and Carroll using RF waves for increased reading range for broader utility.

3) Regarding claim 78, Kip et al. and Carroll render obvious all of the claimed subject matter as in claim 75, including:

--the claimed loop antenna (coiled antenna 5 of Kip et al. which inherently is a loop or loop antenna).

4) In considering claims 79 and 81, Kip et al. and Carroll render all of the claimed subject matter obvious as in claim 75, including:

--the claimed nonvolatile memory section that stores at least a portion of the input data (24 of Fig. 5 and col. 2, lines 52-55 and col. 3, lines 4-5 of Kip et al.).

5) In considering claim 80, Kip et al. and Carroll render all of the claimed subject matter obvious as in claim 75, including:

--the claimed tuning circuit ("C" and "10" in Fig. 4 and "10" in Fig. 2 of Kip et al.) that tunes the first antenna to receive the wave at a frequency of between RF waves and ultraviolet ("C3", "C4" in Fig. 6 and col. 5, lines 34-38 of Carroll.).

6) In considering claims 83 and 95, Kip et al. and Carroll render all of the claimed subject matter obvious as in claim 75, including:

a) the claimed shift register circuit (76, 82 in Fig. 4 of Carroll);

except:

b) the claimed multiplexer that controls flow of the input data.

Kip et al. teaches receiving input data for writing into the tag memory (24) whereby the input data is received in electromagnetic wave in a serial manner (Fig. 3, waveform "b"). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use either an appropriate shift register circuit shown as known in the art by Carroll, or a multiplexer to control flow of the input data into the memory for storage in a tag such as taught by Kip et al. and Carroll if the memory-write operation involves converting the serial input data stream into parallel data bits, such as in parallel-input type memories.

7) In considering claims 84 and 94, Kip et al. and Carroll render all of the claimed subject matter obvious as in claim 75, including:

a) the claimed clock generator circuit (28 in Fig. 2 of Carroll)

except:

b) the claimed pulse generating circuit.

Carroll shows the known use of a clock generator circuit for providing timing signals for controlling tag operations (28 in Fig. 2 and col. 4, lines 55-57). Kip et al. shows that the IC 7 in Fig. 3 activates switch 9 according to the output data in digital form. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include a clock generator circuit such as taught by Carroll, or a similar pulse generating circuit (since used for digital

switching here) in IC 7 in a tag such as taught by Kip et al. and Carroll to provide the timing signals for operation of the switch to generate the digital output data.

8) In considering claims 91 and 93, Kip et al. and Carroll render all of the claimed subject matter obvious as in claim 75, including:

--the claimed input and output data are in digital form (Figs. 2-3 of Kip et al.)

9) In considering claims 90 and 92, Kip et al. and Carroll render all of the claimed subject matter obvious as in claim 27, including:

--the claimed input and output data are in analog form (Fig. 5A of Carroll).

While Kip et al. discloses a tag communication system using digital data format, Carroll shows the known alternative of using analog. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use either analog or digital form for the input and output data in a tag such as taught by Kip et al. and Carroll based on the preferred modulation method of choice without unexpected results.

10) In considering claim 96, Kip et al. and Carroll render all of the claimed subject matter obvious as in claim 75, including:

--the claimed data processing system that processes the input data and produces at least one decision and takes at least one action (circuit component 7 in Fig. 2 of Kip et al. that bases on the input data in the input wave and decides on the operations and actions of reading, writing, and transmitting and carrying out those operations and actions).

11) In considering claim 100, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 75, including:

--the claimed circuits selected from a group of circuits including logic (AND & OR/NOR logic gates used in Fig. 4 of Carroll), sequencing (register 76 in Fig. 4 of Carroll) and switching (9 in Fig. 2 of Kip et al.; gated switching in Fig. 4 of Carroll).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use such known logic and sequencing circuits in a tag such as taught by Kip et al. and Carroll to logically determine (using logic) the current mode of operation (reading and writing in Fig. 3 of Kip et al.) and to time (using sequencing) the operational stages of receiving, reading, writing, switching and transmitting.

3. **Claims 27-28, 33-44, 48-52, 54-64, 68-74, 77, 85-88, 102-103 and 107-109**are rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al. (US pat. #5,105,190) in view of Moskowitz et al. (US pat. #5,528,222) and Carroll (US pat. #4,857,893).

1) In considering amended claims 27, 50-52 and 64:

Kip et al. discloses a tag comprising a circuit having: an antenna (5) that receives an electromagnetic wave (Fig. 2); a signal receiving system that receives and stores input data derived from the wave (23, 24 of Fig. 2; Fig. 3), a separate power storage component that receives and stores sufficient energy to power the circuit including the transmitting antenna (6, 26, 8 of Fig. 2); a data processing system (7 of Fig. 2) that produces output data form the input data; and the backscatter antenna (5) and electronics (7) transmit at least a portion of the output data externally to the tag (Figs. 2-3); except: a) the claimed separate use of first and second antennas for respective receiving and transmitting; b) the circuit is in the form of an integrated circuit.

In the same art of tag construction, Moskowitz et al. teaches the known alternative use of first and second separate (dipole) antennas for receiving and transmitting, respectively (Fig. 5); while Carroll teaches all circuit components of a tag are implemented in the form of an integrated circuit located on a die (Figs. 9A-9B and col. 11, line 11 to col. 12, line 51).

While Kip et al. shows using a single antenna for transmitting and receiving requiring sharing of the antenna, Moskowitz et al. demonstrated the single antenna's well known alternative of using separate transmitting and receiving antennas (Figs. 4-6). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use separate receiving and transmitting antennas in a system such as taught by Kip et al. and Moskowitz to alleviate the need to share a single antenna for both receiving and antenna thus alleviating antenna-sharing timing management constraints, and furthermore to use first and second dipole antennas as taught by Moskowitz et al. as alternatives to the coil antenna of Kip et al. for relatively longer reading range.

In view of the teachings by Kip et al., Moskowitz et al. and Carroll, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the tag circuit of Kip and Moskowitz in an integrated circuit form as taught by Carroll for mass production benefits such as cost, and compact housing for ease of physical application in intended uses.

2) In considering amended claim 28, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in the consideration of amended claim 27.

3) In considering amended claim 33, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, including:

--the claimed wave has a wavelength within a spectrum of the wavelengths from radio waves to ultraviolet light inclusive (RF of Abstract of Moskowitz et al.; col. 4, lines 50-55 and col. 2, lines 43-52 of Carroll.)

While Kip et al. did not specify the frequency range of the electromagnetic waves in the spectrum, Moskowitz et al. and Carroll specified the RF waves, and Carroll indicated that use of RF waves as opposed to magnetic fields enables longer reading range (col. 2, lines 43-52). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the tag system of Kip et al., Moskowitz et al. and Carroll using RF waves for increased reading range for broader utility.

4) In considering amended claims 34-35, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, including:

--the claimed nonvolatile memory section (24 of Fig. 5 and col. 2, lines 52-55 and col. 3, lines 4-5 of Kip et al.) that stores at least a portion of the input data and at least a portion of the output data (both).

5) In considering amended claims 36 and 43, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, including:

a) claimed shift register circuit (76, 82 in Fig. 4 of Carroll);

except:

b) the claimed multiplexer that controls flow of the input data.

Kip et al. teaches receiving input data for writing into the tag memory (24) whereby the input data is received in electromagnetic wave in a serial manner (Fig. 3, waveform "b"). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to

use either an appropriate shift register circuit shown as known in the art by Carroll, or a multiplexer to control flow of the input data into the memory for storage in a tag such as taught by Kip et al., Moskowitz et al. and Carroll if the memory-write operation involves converting the serial input data stream into parallel data bits, such as in parallel-input type memories.

6) In considering amended claims 37 and 42, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, including:

a) the claimed clock generator circuit (28 in Fig. 2 of Carroll)

except:

b) the claimed pulse generating circuit.

Carroll shows the known use of a clock generator circuit for providing timing signals for controlling tag operations (28 in Fig. 2 and col. 4, lines 55-57). Kip et al. shows that the IC 7 in Fig. 3 activates switch 9 according to the output data in digital form. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include a clock generator circuit such as taught by Carroll, or a similar pulse generating circuit (since used for digital switching here) in IC 7 in a tag such as taught by Kip et al., Moskowitz et al. and Carroll to provide the timing signals for operation of the switch to generate the digital output data.

7) In considering amended claims 38 and 40, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, plus the consideration of claims 90 and 92, respectively.

8) In considering amended claims 39 and 41, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, plus the consideration of claims 91 and 93, respectively.

9) In considering amended claim 44, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, including:

--the claimed second antenna is a backscatter type antenna (antenna 5 in Fig. 2 and col. 2, lines 32-46 of Kip et al. describing the antenna having backscattering characteristics when in transmitting mode, in combination with Moskowitz et al.'s teaching of using second antenna for transmitting separate from first antenna for receiving.)

10) In considering amended claim 48, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, plus the consideration of claim 68.

11) In considering amended claim 49, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claim 33.

12) In considering amended claims 54-55, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claims 34-35, respectively.

13) In considering amended claim 56, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, except:

-- the claimed multiplexer that controls flow of the output data.

Kip et al. teaches reading output data from the tag memory (24) for serial output using switch 9 (Fig. 2) whereby the data is digital (Fig. 3, waveform "b"). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a multiplexer to control flow of the output data during reading from the memory (conversion from parallel to serial data) for outputting/transmitting in a tag such as taught by Kip et al., Moskowitz et al. and

Carroll if the memory-read operation involves converting the memory stored data into serial data stream, such as when the memory is of the parallel-out type memory.

14) In considering amended claim 57, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claim 37.

15) In considering amended claims 58 and 60, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claims 38 and 40, respectively.

16) In considering amended claims 59 and 61, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claims 39 and 41, respectively.

17) In considering amended claims 62-63, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claims 42-43, respectively.

18) In considering amended claim 68, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claim 48.

19) In considering amended claims 69-70, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claim 33 (RF).

20) In considering amended claim 71, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, plus the consideration of claims 34 and 52.

21) In considering amended claim 72, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claim 71, including:

--the claimed monolithic integrated circuit (line 17 of Abstract of Carroll).

22) In considering amended claim 73, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, plus the consideration of claim 96.

23) In considering amended claim 74, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 28, plus the consideration of claim 73.

24) In considering amended claim 77, Kip et al. and Carroll render all of the claimed subject matter obvious as in claim 75, plus the consideration of claim 27 further in view of Moskowitz et al. regarding the use of dipole antenna.

25) In considering claim 87, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, including:

--the claimed first and second antennas are a single antenna (Figs. 2 & 4 of Kip et al.)

26) Regarding claims 102-103, Kip et al., Moskowitz et al. and Carroll render obvious all of the claimed subject matter as in claim 27, including:

--the claimed loop antenna (coiled antenna 5 of Kip et al. which inherently is a loop or loop antenna).

27) Regarding claim 107, Kip et al., Moskowitz et al. and Carroll render obvious all of the claimed subject matter as in claim 28, including:

--the claimed loop antenna (coiled antenna 5 of Kip et al. which inherently is a loop or loop antenna).

28) Regarding claims 108-109, Kip et al., Moskowitz et al. and Carroll render obvious all of the claimed subject matter as in claim 28, plus the consideration of claim 64.

4. **Claim 101** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al. in view of Carroll and Tuttle et al. (US pat. #5,779,839).

1) Regarding claim 101, Kip et al. and Carroll render obvious all of the claimed subject matter as in claim 75, except:

--the claimed wherein the antenna comprises a single pole antenna.

However, it has been known that a variety of antenna types can be implemented on an RFID transponder tag including a single pole (monopole) antenna, such as taught by Tuttle et al. (Abstract; col. 2, lines 59-65). In view of the teachings by Kip et al., Carroll and Tuttle et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the antenna(s) in Kip et al. and Carroll using a known single pole antenna as taught by Tuttle et al. based on the intended design criteria of power, range and frequency considerations.

5. **Claims 104-106** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al. in view of Moskowtiz, Carroll and Tuttle et al. (US pat. #5,779,839).

1) Regarding claims 104-106, Kip et al., Moskowitz and Carroll render obvious all of the claimed subject matter as in claims 27 or 28, plus the consideration of claim 101 further in view of Tuttle et al.

6. **Claim 97** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al. in view of Carroll and Roth et al. (US pat. #5,272,117).

1) In considering claim 97, Kip et al. and Carroll made obvious all of the claimed subject matter as in claim 75, except:

--the claimed wherein the integrated circuit (IC) is built onto a substrate that includes a material selected from the group consisting of silicone, germanium, GaAs, sapphire, or diamond. Carroll teaches using a chip substrate wherein the integrated circuit and various other tag components are built onto (Figs. 9A-9B), while various materials including silicone, germanium, GaAs, and sapphire or diamond have been known for use in constructing IC or semiconductor substrates or supports, such as taught by Roth et al. (col. 2, line 67 to col. 3, line 14). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that such conventionally used materials can be used as the chip die material/substrate the device such as taught by Kip et al. and Carroll is built onto in view of Roth et al.

7. **Claims 45 and 65** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al. in view of Moskowitz et al., Carroll and Roth et al. (US pat. #5,272,117).

1) In considering claim 65, Kip et al., Moskowitz et al. and Carroll made obvious all of the claimed subject matter as in claim 28, plus the consideration of claim 97 further in view of Roth et al.

2) In considering claim 45, Kip et al., Moskowitz et al. and Carroll made obvious all of the claimed subject matter as in claim 27, plus the consideration of claim 65 above further in view of Roth et al. wherein the IC including its substrate is made of the composition of material listed.

8. **Claims 46-47 and 66-67** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al., Moskowitz et al. and Carroll, and further in view of Schoenian et al. (US pat. #5,748,106).

1) In considering claims 46-47, Kip et al., Moskowitz et al. and Carroll made obvious all of the claimed subject matter as in claim 27, except:

--the claimed wherein the integrated circuit contains test and monitoring control circuitry or points and pads.

However, the concept of testing and monitoring electronic circuits and components on devices either via onboard circuitry or via external devices using testing and monitoring points/pads, in order to ensure the circuits/components are working properly has been well known in the electronic device art. Schoenian et al. further demonstrated that it has been known to test/monitor the circuits on an electronic tag (col. 2, lines 1-13 and Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include test and monitoring control circuitry or points and pads in an electronic tag device such as taught by Kip et al., Moskowitz et al. and Carroll in order to ensure proper operations such as taught by Schoenian et al. by allowing testing using either on-board or external testing/monitoring circuitry.

2) In considering claims 66-67, Carroll and Moskowitz et al. made obvious all of the claimed subject matter as in claim 28, plus the consideration of claims 46-47 above further in view of Schoenian et al.

9. **Claims 98-99** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al., and Carroll, and further in view of Schoenian et al. (US pat. #5,748,106).

1) In considering claims 98-99, Kip et al. and Carroll made obvious all of the claimed subject matter as in claim 75, except:

--the claimed wherein the integrated circuit contains test and monitoring control circuitry or points and pads.

However, the concept of testing and monitoring electronic circuits and components on devices either via onboard circuitry or via external devices using testing and monitoring points/pads, in order to ensure the circuits/components are working properly has been well known in the electronic device art. Schoenian et al. further demonstrated that it has been known to test/monitor the circuits on an electronic tag (col. 2, lines 1-13 and Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include test and monitoring control circuitry or points and pads in an electronic tag device such as taught by Kip et al. and Carroll in order to ensure proper operations such as taught by Schoenian et al. by allowing testing using either on-board or external testing/monitoring circuitry.

10. **Claim 82** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al., Moskowitz et al. and Carroll further in view of Carney et al. (US pat. #5,446,447).

1) In considering amended claim 82, Kip et al., Moskowitz et al. and Carroll render all of the claimed subject matter obvious as in claim 27, except:

--the claimed driver circuit drives the second antenna selected from a group including full wave, half-wave and quarter-wave reflectors.

The RF tag of Kip et al., Moskowitz et al. and Carroll drives the second antenna as a reflector (backscatter) for communicating output data out of the tag using known antennas including coil/loop antennas and dipole antennas.

In the same art, Carney et al. teaches the known alternative use of a half-wave or quarter-wave patch antenna as the backscattering/reflector antenna in an RF passive tag for operation in

the 2.5 GHz or 5.7 GHz ranges (col. 7, lines 27-57; col. 5, lines 56-67). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a known patch antenna such as taught by Carney et al. as the second antenna in a tag such as taught by Kip et al., Moskowitz et al. and Carroll if 2.5 GHz or 5.7 GHz operating frequency ranges are desired or preferred in particular applications or application environments.

11. **Claim 89** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kip et al., Moskowitz et al. and Carroll further in view of Lake (US pat. #6,031,459).

1) In considering claim 89, Kip et al., Moskowitz et al. and Carroll made obvious all of the claimed subject matter as in the consideration of claim 27, except:

--specifying the claimed received wave in the first antenna and the output wave from the second antenna are in a wavelength region of microwave to ultraviolet, inclusive.

While Carroll did not specify whether the radio frequency signals are of the low frequency type or higher microwaves, it has been known to use microwaves as a specific type of radio frequency signals for a passive backscattering tag having either one or two antennas such as taught by Lake (Fig. 1; col. 3, lines 61-62; col. 4, lines 51-58). In view of the teachings by Kip et al., Moskowitz et al., Carroll and Lake it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use microwaves as the radio frequency signals of choice for communication by the tag in a system such as taught by Kip et al., Moskowitz et al. and Carroll in light of the teaching of Lake without unexpected results.

Response to Arguments

12. Applicant's arguments with respect to claims **27-28, 33-52 and 54-84, 87 and 90-109** have been considered but are not deemed persuasive.

Applicant's argument that the Carroll prior art in the combination used in the rejection does not teach or allow its on-chip antenna to provide power to sufficiently power the tag is not persuasive, since Carroll does teach such a limitation (see Abstract; col. 3, lines 21-31 and 37-41). In conclusion, Applicant's arguments are not persuasive, and the rejection is maintained.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) US pat. 6,054,925

--Prior art showing the specific use of dipole antenna in a backscattering type transponder tag.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963. The examiner can normally be reached on Mon -Thu 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8576.

Benjamin C. Lee
Primary Examiner
Art Unit 2612

B.L.
March 25, 2006